AUTHOR INDEX

AHARONI, H., A. BAR-LEV and S. MARGALIT, Defects in epitaxial layers on silicon-germanium grown on silicon substrates 17 (1972) 254
AHARONI, H., *see* MARGALIT 17 (1972) 288
ARIZUMI, T., *see* WATANABE 17 (1972) 183

BADEA, M., *see* MOTOC 17 (1972) 337
BALOG, M., M. SCHIEBER, S. PATAI and M. MICHMAN, Thin films of metal oxides on silicon by chemical vapor deposition with organometallic compounds 17 (1972) 298
BAN, V. S., Mass spectrometric and thermodynamic studies of the CVD of some III–V compounds 17 (1972) 19
BANDO, Y., *see* NAGASAWA 17 (1972) 143
BANDYOPADHYAY, T., F. GRANZER and K. F. GÜTLICH, Electron microscopic investigations of the annealed structures of epitaxially grown evaporated LiF films 17 (1972) 360
BAR-LEV, A., *see* AHARONI 17 (1972) 254
BAR-LEV, A., *see* MARGALIT 17 (1972) 288
BARTELS, G., *see* TOLKSDORF 17 (1972) 322
BHARGAVA, R. N., *see* BLOM 17 (1972) 38
BISCHOF, R., *see* KORDIS 17 (1972) 53
BLANCONNIER, P. et P. HENOC, Croissance épitaxique des composés II–VI en phase vapeur 17 (1972) 218
BLANK, S. L. and J. W. NIELSEN, The growth of magnetic garnets by liquid phase epitaxy 17 (1972) 302
BLOM, G. M. and R. N. BHARGAVA, Radiative complex formation in vapor phase epitaxial GaP 17 (1972) 38
BROWN, D. M., M. GARFINKEL, M. GHEZZO, E. A. TAFT, A. TENNEY and J. WONG, Characteristics of doped oxides and their use in silicon device fabrication 17 (1972) 276

CARDETTA, V. L., A. M. MANCINI, C. MANFREDOTTI and A. RIZZO, Growth and habit of GaSe crystals obtained from vapour by various methods 17 (1972) 155
CORBOY, JR., J. F., *see* GOTTLIEB 17 (1972) 261
CULLEN, G. W. and F. C. DOUGHERTY, Silicon on spinel: the interaction between deposition constituents and the substrate surface 17 (1972) 230
CURTIS, B. J. and J. P. DISMUKES, Effects of natural and forced convection in vapor phase growth systems . . . 17 (1972) 128

DAVAL, J., *see* FERRAND 17 (1972) 312
DAVIS, L. E., L. L. LEVENSON and J. J. MELLES, A study of phosphorus adsorption and desorption kinetics on silicon (111) surfaces 17 (1972) 354
DILORENZO, J. V., Vapor growth of epitaxial GaAs: a summary of parameters which influence the purity and morphology of epitaxial layers 17 (1972) 189
DISMUKES, J. P., *see* CURTIS 17 (1972) 128
DONOHOE, A. J. and J. L. ROBINS, Mobility and coalescence of nuclei in metal vapour deposition on alkali halide substrates 17 (1972) 70
DOUGHERTY, F. C., *see* CULLEN 17 (1972) 230
DRUMINSKI, M. and H. SCHLÖTTERER, The combination of two growth methods for the epitaxial deposition of silicon films on insulating substrates 17 (1972) 249
DUGUE, M., *see* MOULIN 17 (1972) 212

EMMENEGGER, F. P., Gaseous complexes – their role in chemical transport 17 (1972) 31
ESPINOSA, G. P., *see* TOLKSDORF 17 (1972) 322

FABRE, E., *see* HALLAIS 17 (1972) 173

FERRAND, B., J. DAVAL and J. C. JOUBERT, Heteroepitaxial growth of single crystal films of YIG on GdGaG substrates by hydrothermal synthesis 17 (1972) 312

GARFINKEL, M., *see* BROWN 17 (1972) 276
GEBHARDT, M. und A. NEUHAUS, Phasen und Epitaxien in gasnitrierten polykristallinen Fe-Blechen und einkristallinen Fe-Folien 17 (1972) 333
GHEZZO, M., *see* BROWN 17 (1972) 276
GINGERICH, K. A., *see* KORDIS 17 (1972) 53
GITTLER, F. L., Epitaxial deposition of silicon in nitrogen 17 (1972) 271
GOTTLIEB, G. E. and J. F. CORBOY, JR., The development of a dual rate technique for the growth of silicon-on-sapphire film 17 (1972) 261
GRANZER, F., *see* BANDYOPADHYAY 17 (1972) 360
GÜTLICH, K. F., *see* BANDYOPADHYAY 17 (1972) 360

HALLAIS, J., C. SCHEMALI and E. FABRE, Vapour epitaxial growth and characterization of $InAs_{1-x}P_x$ 17 (1972) 173
HENOC, P., *see* BLANCONNIER 17 (1972) 218
HIRTH, J. P., Some comments on heterogeneous nucleation from the vapor phase 17 (1972) 63
HISCOCKS, S. E. R., The vapour growth of IV–VI compounds 17 (1972) 222
HOARE, M. R. and P. PAL, Statistics and stability of small assemblies of atoms 17 (1972) 77
HOLST, P., *see* TOLKSDORF 17 (1972) 322
HUBER, A., *see* MOULIN 17 (1972) 212

JEFFES, J. H. E. and T. N. R. MARPLES, The thermodynamics of chemical transport reactions with special references to the transport of tantalum by iodine 17 (1972) 46
JOUBERT, J. C., *see* FERRAND 17 (1972) 312

KALDIS, E., Kinetic and thermodynamic aspects of high temperature chemical transport and sublimation of EuS . 17 (1972) 3
KALDIS, E., *see* KORDIS 17 (1972) 53
KORDIS, J., K. A. GINGERICH, R. J. SEYSE, E. KALDIS and R. BISCHOF, Synthesis, vaporization and crystal growth of gadolinium and holmium nitrides 17 (1972) 53
KRAMER, H. M. and J. A. VENABLES, Epitaxial growth of rare gas crystals 17 (1972) 329
KUPER, A. B., *see* MARGALIT 17 (1972) 288

LACMANN, R. and H.-J. RANDIG, Electrolytic nucleation of copper and brass on platinum single crystal spheres . . 17 (1972) 97
LAFLEUR, W. J., *see* REED 17 (1972) 123
LEVENSON, L. L., *see* DAVIS 17 (1972) 354
LUBEZKY, I. and D. S. TANNHAUSER, Epitaxial growth of very pure NiO single crystals 17 (1972) 162

MANCINI, A. M., *see* CARDETTA 17 (1972) 155
MARGALIT, S., *see* AHARONI 17 (1972) 254
MARGALIT, S., A. BAR-LEV, A. B. KUPER, H. AHARONI and A. NEUGROSCHEL, Oxidation of silicon–germanium alloys 17 (1972) 288
MARPLES, T. N. R., *see* JEFFES 17 (1972) 46
MATEIKA, D., *see* TOLKSDORF 17 (1972) 322
MANFREDOTTI, C., *see* CARDETTA 17 (1972) 155
MELLES, J. J., *see* DAVIS 17 (1972) 354
MICHMAN, M., *see* BALOG 17 (1972) 298
MOTOC, C. and M. BADEA, Epitaxial growth and the electrical properties of the substrates 17 (1972) 337
MOULIN, M., A. HUBER and M. DUGUE, Contamination of CdS heteroepitaxial layers during vapour growth on GaAs substrates 17 (1972) 212

NAGASAWA, K., Y. BANDO and T. TAKADA, Crystal growth of vanadium oxides by chemical transport 17 (1972) 143
NEUGROSCHEL, A., *see* MARGALIT 17 (1972) 288
NEUHAUS, A., *see* GEBHARDT 17 (1972) 333
NIELSEN, J. W., *see* BLANK 17 (1972) 302
NISHINAGA, T., *see* WATANABE 17 (1972) 183
NISHIZAWA, J., T. TERASAKI and M. SHIMBO, Silicon epitaxial growth 17 (1972) 241

ORON, M., Substrate contamination during LPE growth of lithium-chromium ferrite film as evidenced by Mössbauer spectroscopy 17 (1972) 357

PAL, P., *see* HOARE 17 (1972) 77
PATAI, S., *see* BALOG 17 (1972) 298

QUEISSER, H. J., Propagation of dislocations during epitaxy 17 (1972) 169

RANDIG, H.-J., *see* LACMANN 17 (1972) 97
REED, T. B. and W. J. LAFLEUR, Dependence of growth temperature on carrier gas velocity in open tube transport 17 (1972) 123
RICHTER, K., On the early deposition of GaP onto GaAs 17 (1972) 207
RIZZO, A., *see* CARDETTA 17 (1972) 155
ROBINS, J. L., *see* DONOHOE 17 (1972) 70
ROUSE, L. M. and E. A. D. WHITE, Interface reactions in II–VI compounds 17 (1972) 117
RUBENSTEIN, M., Preparation and analysis of homogeneous solid solution crystals of the system Si–Ge 17 (1972) 149

SCHIEBER, M., *see* BALOG 17 (1972) 298
SCHEMALI, C., *see* HALLAIS 17 (1972) 173
SCHLÖTTERER, H., *see* DRUMINSKI 17 (1972) 249
SEYSE, R. J., *see* KORDIS 17 (1972) 53
SHIMBO, M., *see* DOUGHERTY 17 (1972) 241

TAFT, E. A., *see* BROWN 17 (1972) 276
TAKADA, T., *see* NAGASAWA 17 (1972) 143
TANNHAUSER, D. S., *see* LUBEZKY 17 (1972) 162
TENNEY, A., *see* BROWN 17 (1972) 276
TERASAKI, T., *see* DOUGHERTY 17 (1972) 241
TOLKSDORF, W., G. BARTELS, G. P. ESPINOSA, P. HOLST, D. MATEIKA and F. WELZ, Controlled lattice constant mismatch by compositional changes in liquid phase epitaxially grown single crystal films of rare earth yttrium iron gallium garnets on gadolinium gallium garnet substrates 17 (1972) 322

VENABLES, J. A., *see* KRAMER 17 (1972) 329
VEPŘEK, S., Chemical evaporation and deposition of solids in a non-isothermal plasma; chemical transport of carbon 17 (1972) 101

WATANABE, H., T. NISHINAGA and T. ARIZUMI, Vapour transport equations for III–V compound semiconductors 17 (1972) 183
WEBER, R. E., Auger electron spectroscopy for thin film analysis 17 (1972) 342
WELZ, F., *see* TOLKSDORF 17 (1972) 322
WHITE, E. A. D., *see* ROUSE 17 (1972) 117
WHITE, E. A. D. and J. D. C. WOOD, Heat and mass transfer in liquid phase epitaxy processes 17 (1972) 315
WONG, J., *see* BROWN 17 (1972) 276
WOOD, J. D. C., *see* WHITE 17 (1972) 315

SUBJECT INDEX

Ammonium chloride 337
Annealing of thin films 70
Apparatus
— for thin films
— — by vapor phase epitaxy
— — — of lead tin telluride 222
— — — of silicon (on spinel and sapphire) 249, 261
— for vapor growth
— — by chemical transport
— — — of tantalum 46
— — by evaporation and condensation
— — — of zinc telluride 123
Ar 77
Auger electron spectroscopy 342
Autodoping of silicon 271

(α-) Brass 97

Cadmium sulphide 117, 212, 218
Calcium niobate 31
Carbon 101
Coalescence of nuclei 70
Cobalt ferrite 31
Complexes
— gaseous 31
— radiative 38
Convection
— natural and forced 128
Convective temperature oscillations 128
Copper 97

Dendritic growth of 329, 337
Description, adsorption 354
Diffusion
— thermal 123
Dislocations 169

Electron mobility 189
Epitaxy, *see* Thin film techniques
— hetero 212, 230, 254, 261, 312
Europium
— erbium iron germanium garnet ($EuEr_2Fe_{4.3}Ge_{0.7}O_{12}$) 302
— sulphide 3
— polysulphide 3
Evaporation coefficient of europium sulphide 3
Etching
— chemical 249, 322
— thermal 207
Gallium
— arsenide 183, 189
— arsenide phosphide 19
— indium phosphide 19
— nitride 19
— phosphide 38, 207
— selenide 155
Garnet 302, 312, 322
GdGaG 312
Glasses 276
Gold 70

Hafnium dioxide 298
Hydrodynamics in liquid–phase-epitaxy 315

Indium
— arsenide phosphide 173
Interface reaction during vapor growth 117
Interface reaction during liquid phase epitaxy 315
Iron nitride 333

Kinetics
— of growth 3, 19, 38, 46, 70, 241, 302
— of nucleation 63, 70, 77, 97, 117, 169, 241
Krypton 329

Lead
— telluride 222
— — tin 222
Lithium chrome ferrite ($Li_{0.5}Cr_{1.25}Fe_{1.25}O_4$) 357
Lithium fluoride 360

Magnesium chloride 31
Mass spectrometry of chemical vapor transport 19, 53
Morphological stability 77
Morphology of growth 3, 155, 189, 241, 322, 239, 360
Mössbauer characterization 357

Nickel
— chloride 31
— oxide 162
Nitrides
— gadolinium 53
— holmium 53
— scandium 19
Nucleation, *see* Kinetics of –, Statistical thermodynamics of –

– heterogeneous 97

Perfection 149, 162, 169, 173, 241, 254, 315, 329, 357, 360
Phase diagrams
– of rare earth garnets: $PbO:B_2O_3$ 302
Platinum 97

Scandium nitride 19
Semiconducting properties 230
Silicon 230, 241, 249, 261, 271, 354
– germanium 149, 254
Silicon dioxide films
– arsenic trioxide 276
– boric oxide 276
– germanium dioxide 288
– phosphorous pentoxide 276
Silver 63, 70
Solution growth technique
– by flux
– – of rare earth magnetic garnets 302
– – of YIG (pure and substituted) 322
– – theory of 315
Substrate contamination 212, 357
Stacking fault energy 329
Statistical thermodynamics of nucleation 77
Striation in vapor grown crystals 128

Tantalum 46
Thermodynamics of vapor chemical transport 19, 53
Thin film technique
– analysis of 342
– by hydrothermal synthesis
– – of garnets 312
– by liquid phase epitaxy
– – of lithium chromium ferrite 357
– – of YIG 312, 322
– – theory of 315
– by vapor phase epitaxy
– – by chemical vapor deposition
– – – by condensation at low temperature
– – – – of rare gas crystals 329
– – – of ammonium chloride 337
– – – of cadmium sulphide 212
– – – of gallium arsenide 183, 189
– – – of gallium phosphide 38, 209
– – – of hafnium dioxide 298
– – – of lead tin telluride 222
– – – of mixed oxide glasses 276
– – – of rare earth magnetic garnets 302
– – – of silicon 230, 241, 249, 269, 271
– – – of silicon germanium dioxide 288
– – – of titanium dioxide 298
– – – of III–V compounds 19
– – – of vanadium dioxide 128
– – – of zirconium dioxide 298
– – by evaporation and condensation
– – – of lithium fluoride 360
– – – of silicon 354
– – by vapor–solid reaction
– – – of iron nitride 333
– – theory of 63, 128
Transitions from singular to non-singular faces
– in europium sulphides 3

Vanadium dioxide 143
Vapor growth
– by chemical transport
– – in sealed Mo crucibles, of europium sulphide 3
– – under high pressure high temperature, of europium sulphide 3
– – of calcium niobate 31
– – of carbon 101
– – of cobalt ferrite 31
– – of gallium arsenide 183
– – of gallium selenide 155
– – of indium arsenide phosphide 173
– – of magnesium chloride 31
– – of nickel chloride 31
– – of nickel oxide 162
– – of rare earth nitrides 53
– – of silicon germanium 149
– – of tantalum 46
– – of vanadium dioxide 143
– by evaporation and condensation
– – of gallium selenide 155
– – of gold 70
– – of silver 70
– – of II–VI compounds 117
– – of zinc telluride 123
– – theory of 31, 123, 183
– – – in a non-isothermal plasma 101
– convection during 128
– by evaporation and condensation
– – of europium sulphide 3

Wurtzite 117

Xenon 329

YIG 312, 322
Yttrium (gadolinium, samarium, lanthanum) iron gallium garnet 322

Zinc
– blende 173
– selenide 218
– telluride 123, 218
Zirconium dioxide 298

COMPOUND INDEX

Ag 63, 70
Ar 77
Au 70
C 101, 128
$CaNb_2O_6$ 31
CdS 117, 212, 218
$CoFe_2O_4$ 31
Cu 97
Cu–Zn 97
$EuEr_2Fe_{4.3}Ga_{0.7}O_{12}$ 302
EuS 3
Eu_3S_4 3
Fe–N 333
GaAs 19, 128, 183, 189
$GaAs_xP_{1-x}$ 19
GaN 19
GaP 38, 207
GaSe 155
$Gd_3Ga_5O_{12}$ 312
GdN 53
Ge 128
GeO_2 288
HfO_2 298
HoN 53
$InAs_{1-x}P_x$ 173
$In_{1-x}Ga_xP$ 128
Kr 329
$Li_{0.5}Cr_{1.25}Fe_{1.25}O_4$ 357
LiF 360
$MgCl_2$ 31
NH_4Cl 337
$NiCl_2$ 31
NiO 162
$Pb_{1-x}Sn_xTe$ 222
PbTe 222
ScN 19
Si 230, 249, 261, 271, 354
SiC 128
Si–Ge 149, 254, 288
SiO_2 288
$SiO_2:As_2O_3$ 276
$SiO_2:B_2O_3$ 276
$SiO_2:P_2O_5$ 276
Ta 46
TiO_2 298
VO_2 143
W–Re 128
Xe 329
$Y_3Fe_5O_{12}$ 312, 322
$Y_{3-x}(Gd, Sm, La)_xFe_4O_{12}$ 322
ZnS 128
ZnSe 218
ZnTe 123, 218
ZrO_2 298